

## REMARKS

The Examiner has rejected Claims 1-11, 13-19, and 21-26 under 35 U.S.C. 102(e) as being anticipated by Wong (U.S. Publication No. 2004/0264464 A1 using Provisional Application No. 60/482,759). Applicant respectfully disagrees with such rejection, especially in view of the amendments made hereinabove to independent claims 1, 11, 21, and 26. Specifically, applicant has amended independent claims 1, 11, 21, and 26 to at least substantially include the subject matter of former dependent claim 22.

With respect to independent claims 1, 21, and 25, the Examiner has relied on the CPE egress bus in the block diagram on page STN-2 from Wong to make a prior art showing of applicant's claimed "plurality of output ports configured to output the packet" (see this or similar, but not necessarily identical language in the aforementioned independent claims).

Applicant respectfully asserts that the block diagram relied upon by the Examiner merely shows a "CPE bus (Egress)." However, the block diagram fails to specifically teach or suggest "a plurality of output ports" not to mention "a plurality of output ports configured to output the packet" (emphasis added), as claimed by applicant.

With respect to independent claim 1, the Examiner has relied on page STN-10, lines 1-8; and step 5 on page STN-13 from Wong to make a prior art showing of applicant's claimed technique "wherein...a number of duplications of the packet for each of the plurality of output ports is controlled by descriptors."

Applicant respectfully asserts that, on page STN-10, Wong merely teaches that "[a]n IPMC packet is sent only once on the 10\_GE egress port" and "[t]his function is done at the egress of the 10\_GE port" where "[t]wo tables are used for look up to support IPMC replication per VLAN." Furthermore, in step 5 on page STN-13, Wong merely teaches that a "HEAD\_POINTER [is used] as an index to the LS\_TABLE." However, disclosing that "[t]wo tables are used for look up to support IPMC replication per VLAN"

and that a "HEAD\_POINTER [is used] as an index to the LS\_TABLE" (emphasis added), as in Wong, fails to even suggest "a number of duplications of the packet for each of the plurality of output ports" (emphasis added), not to mention that "a number of duplications of the packet for each of the plurality of output ports is controlled by descriptors" (emphasis added), as claimed by applicant.

Additionally, with respect to independent claim 1, the Examiner has relied on the L3 table on page STN-7 from Wong to make a prior art showing of applicant's claimed "descriptors arranged in a linked-list table."

Applicant respectfully asserts that page STN-7 from Wong merely teaches that "Equal Cost Multi-Path (ECMP) routing is a feature which enables an IP packet to be L3 switched to one of multiple next hops" and generally illustrates an L3 table. However, merely disclosing an L3 table and "a feature which enables an IP packet to be L3 switched to one of multiple next hops," as in Wong, fails to teach or even suggest "descriptors arranged in a linked-list table" (emphasis added), especially when read in the context claimed by applicant where "a number of duplications of the packet for each of the plurality of output ports is controlled by descriptors arranged in a linked-list table" (emphasis added), as claimed by applicant.

Further, with respect to independent claim 1, the Examiner has relied on page STN-11, lines 1-12; and page STN-12, lines 7-8 from Wong to make a prior art showing of applicant's claimed "hashing function applied to said multicast address data."

Applicant respectfully asserts that page STN-11 from Wong merely discloses that "[t]he IPMC group is used as an index into the IP Replication MS Table (IP\_REP\_HI Table)" and illustrates the MS Table with different fields. Additionally, page STN-12 from Wong merely shows an "LS Table" with an "LS\_Vector" that is a "64-bit [v]ector for specifying the LS 6 bits of [a] vlan tag." However, simply disclosing that "[t]he IPMC group is used as an index into the IP Replication MS Table" and a "64-bit [v]ector for specifying the LS 6 bits of [a] vlan tag," as in Wong, fails to even suggest "a hashing

function applied to said multicast address data” (emphasis added), not to mention that “a number of duplications of the packet for each of the plurality of output ports is controlled by descriptors arranged in a linked-list table indexed by a hashing function applied to said multicast address data” (emphasis added), as in the context claimed by applicant.

With respect to independent claim 11, the Examiner has relied on page STN-11, lines 1-12; and page STN-12, lines 7-8 from Wong to make a prior art showing of applicant’s claimed “performing a hashing function on said multicast address data.”

Applicant respectfully asserts that page STN-11 from Wong merely discloses that “[t]he IPMC group is used as an index into the IP Replication MS Table (IP\_REP\_HI Table)” and shows the MS Table with different fields. Additionally, page STN-12 from Wong merely shows an “LS Table” with an “LS\_Vector” that is a “64-bit [v]ector for specifying the LS 6 bits of [a] vlan tag.” However, simply disclosing that “[t]he IPMC group is used as an index into the IP Replication MS Table” and a “64-bit [v]ector for specifying the LS 6 bits of [a] vlan tag,” as in Wong, fails to even suggest “performing a hashing function on said multicast address data” (emphasis added), as claimed by applicant.

With respect to independent claims 11 and 26, the Examiner has relied on page STN-7 from Wong to make a prior art showing of applicant’s claimed “using the results of said hashing function as an index for a linked-list table” (see this or similar, but not necessarily identical language in the aforementioned independent claims).

Applicant respectfully asserts that page STN-7 from Wong merely teaches that “Equal Cost Multi-Path (ECMP) routing is a feature which enables an IP packet to be L3 switched to one of multiple next hops” and generally illustrates an “L3 interface index” from an “L3 Table” to an “L3 Interface Table.” However, merely disclosing an “L3 interface index” and “a feature which enables an IP packet to be L3 switched to one of multiple next hops,” as in Wong, fails to teach or even suggest “using the results of said

hashing function as an index for a linked-list table" (emphasis added), as claimed by applicant.

Additionally, with respect to independent claim 11, the Examiner has relied on step 7 on page STN-8 from Wong to make a prior art showing of applicant's claimed "using information contained in said VLAN pointer descriptor to control applying an encoding for the duplication of the packet."

Applicant respectfully asserts that step 7 on page STN-8 from Wong merely discloses that "[t]he index points to the first entry of [a] column of 8-entries in the L3 table" and "[t]hen the offset which is [a] 3-bit field...is used to point[] into one of the 8 entries." However, simply disclosing that "the offset which is [a] 3-bit field...is used to point[] into one of the 8 entries," as in Wong, fails to even suggest that "information contained in said VLAN pointer descriptor [is used] to control applying an encoding for the duplication of the packet" (emphasis added), as claimed by applicant.

With respect to independent claims 21 and 25, the Examiner has relied on page STN-11, lines 1-12; and page STN-12, lines 7-8 from Wong to make a prior art showing of applicant's claimed technique "wherein said system applies a hashing function to the multicast address data of said multicast packets" (see this or similar, but not necessarily identical language in the aforementioned independent claims).

Applicant respectfully asserts that page STN-11 from Wong merely discloses that "[t]he IPMC group is used as an index into the IP Replication MS Table (IP\_REP\_HI Table)" and shows the MS Table with different fields. Additionally, page STN-12 from Wong merely shows an "LS Table" with an "LS\_Vector" that is a "64-bit [v]ector for specifying the LS 6 bits of [a] vlan tag." However, simply disclosing that "[t]he IPMC group is used as an index into the IP Replication MS Table" and a "64-bit [v]ector for specifying the LS 6 bits of [a] vlan tag," as in Wong, fails to even suggest a technique "wherein said system applies a hashing function to the multicast address data of said multicast packets" (emphasis added), as claimed by applicant.

Further, with respect to independent claims 21 and 25, the Examiner has relied on page STN-7 from Wong to make a prior art showing of applicant's claimed technique "wherein said system uses said hashing function as an index to a linked-list table" (see this or similar, but not necessarily identical language in the aforementioned independent claims).

Applicant respectfully asserts that page STN-7 from Wong merely teaches that "Equal Cost Multi-Path (ECMP) routing is a feature which enables an IP packet to be L3 switched to one of multiple next hops" and generally illustrates an "L3 interface index" from an "L3 Table" to an "L3 Interface Table." However, merely disclosing an "L3 interface index" and "a feature which enables an IP packet to be L3 switched to one of multiple next hops," as in Wong, fails to teach or even suggest a technique "wherein said system uses said hashing function as an index to a linked-list table" (emphasis added), as claimed by applicant.

Additionally, with respect to independent claims 21 and 25, the Examiner has relied on step 5 on page STN-8 from Wong to make a prior art showing of applicant's claimed technique "wherein a number of distributions of said multicast packet and an output port distribution of said multicast packet is controlled by information stored in either the multicast descriptors or multicast VLAN descriptors" (as amended - see this or similar, but not necessarily identical language in the aforementioned independent claims).

Applicant respectfully asserts that step 5 on page STN-8 from Wong merely shows a step where a variable is set such that "Next-searchkey = lpm\_addr[14:0] = {next\_pointer, lpn}." However, step 5 from Wong fails to teach or even suggest that "a number of distributions of said multicast packet and an output port distribution of said multicast packet is controlled by information stored in either the multicast descriptors or multicast VLAN descriptors" (emphasis added), as claimed by applicant.

With respect to independent claim 25, the Examiner has relied on step 7 on page STN-8; step 9 on page STN-13; and step 12 on page STN-13 from Wong to make a prior art showing of applicant's claimed technique "wherein said VLAN descriptors include at least one of...a contiguous range encoding that includes a starting VLAN indicator and an ending VLAN indicator."

Applicant respectfully asserts that step 7 on page STN-8 from Wong merely discloses that "[t]he index points to the first entry of [a] column of 8-entries in the L3 table" and "[t]hen the offset which is [a] 3-bit field...is used to point[] into one of the 8 entries." Furthermore, in step 9 on page STN-13, Wong merely shows that "VLAN\_ID1=MSB1+LSB1" and "VLAN\_ID1=12'b000000000010." Additionally, in step 12, Wong merely shows that "VLAN\_ID2=MSB1+LSB2" and "VLAN\_ID2=12'b000000111111."

However, simply disclosing that "the offset which is [a] 3-bit field...is used to point[] into one of the 8 entries," as in Wong, fails to even suggest "a contiguous range encoding," not to mention "a contiguous range encoding that includes a starting VLAN indicator and an ending VLAN indicator" (emphasis added), as claimed by applicant. Further, simply disclosing steps where "VLAN\_ID1=MSB1+LSB1" and "VLAN\_ID2=MSB1+LSB2," as in Wong, fails to teach or suggest "a contiguous range encoding that includes a starting VLAN indicator and an ending VLAN indicator" (emphasis added), as claimed by applicant.

Furthermore, with respect to independent claim 25, the Examiner has failed to indicate any specific portion of the Wong reference which teaches applicant's claimed "non-contiguous range encoding that includes a most significant bit (MSB) portion of a VLAN indicator and a bitmap decoded from a least significant bit (LSB) portion of the VLAN indicator...and...discrete encoding that includes a first VLAN indicator and a second VLAN indicator" (as amended). Accordingly, a notice of allowance or specific prior art showing of each of the foregoing claim elements is respectfully requested.

With respect to independent claim 26, the Examiner has relied on page STN-11, lines 1-12; and page STN-12, lines 7-8 from Wong to make a prior art showing of applicant's claimed "applying a hashing function to the multicast address data of said multicast packets."

Applicant respectfully asserts that page STN-11 from Wong merely discloses that "[t]he IPMC group is used as an index into the IP Replication MS Table (IP\_REP\_HI Table)" and shows the MS Table with different fields. Additionally, page STN-12 from Wong merely shows an "LS Table" with an "LS\_Vector" that is a "64-bit [v]ector for specifying the LS 6 bits of [a] vlan tag." However, simply disclosing that "[t]he IPMC group is used as an index into the IP Replication MS Table" and a "64-bit [v]ector for specifying the LS 6 bits of [a] vlan tag," as in Wong, fails to even suggest "applying a hashing function to the multicast address data of said multicast packets" (emphasis added), as claimed by applicant.

Additionally, with respect to independent claim 26, the Examiner has relied on page 3, lines 6-7 from Wong to make a prior art showing of applicant's claimed "obtaining information regarding how said multicast packets should be distributed to various output ports to at least one VLAN from said VLAN descriptor."

Applicant respectfully asserts that, on page 3, lines 6-7, Wong merely teaches that "[f]or Gigabit ports, the maximum number of VLANs supported for replication is 32" and "[f]or Fast Ethernet ports, the maximum number of VLANs supported for replication is 8." However, merely disclosing the maximum number of VLANs supported for replication using Gigabit ports and Fast Ethernet ports, as in Wong, fails to even suggest "obtaining information regarding how said multicast packets should be distributed to various output ports to at least one VLAN from said VLAN descriptor" (emphasis added), as claimed by applicant.

Further, with respect to independent claim 26, the Examiner has relied on page 3, lines 6-7 from Wong to make a prior art showing of applicant's claimed "using this distribution information to distribute said multicast packets to said at least one VLAN."

Applicant again respectfully asserts that, on page 3, lines 6-7, Wong merely teaches that "[f]or Gigabit ports, the maximum number of VLANs supported for replication is 32" and "[f]or Fast Ethernet ports, the maximum number of VLANs supported for replication is 8." However, merely disclosing the maximum number of VLANs supported for replication using Gigabit ports and Fast Ethernet ports, as in Wong, fails to even suggest "using this distribution information to distribute said multicast packets to said at least one VLAN" (emphasis added), as claimed by applicant, especially considering that "[the] information...[is obtained] from said VLAN descriptor" (emphasis added), in the context claimed by applicant (see independent claim for context).

The Examiner is reminded that a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. Of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Moreover, the identical invention must be shown in as complete detail as contained in the claim. *Richardson v. Suzuki Motor Co.* 868 F.2d 1226, 1236, 9USPQ2d 1913, 1920 (Fed. Cir. 1989). The elements must be arranged as required by the claim.

This criterion has simply not been met by the above reference, as noted above. Nevertheless, despite such paramount deficiencies and in the spirit of expediting the prosecution of the present application, applicant has amended independent claims 1, 11, 21, and 26 to at least substantially include the subject matter of former dependent Claim 22.

With respect to the subject matter of former Claim 22 (now at least substantially incorporated into each of the independent claims), the Examiner has relied on step 7 on



page STN-8; step 9 on page STN-13; and step 12 on page STN-13 from Wong to make a prior art showing of applicant's claimed "contiguous range encoding that includes a starting indicator and an ending indicator" (as amended - see this or similar, but not necessarily identical language in the independent claims).

Applicant respectfully asserts that step 7 on page STN-8 from Wong merely discloses that "[t]he index points to the first entry of [a] column of 8-entries in the L3 table" and "[t]hen the offset which is [a] 3-bit field...is used to point[] into one of the 8 entries." Furthermore, in step 9 on page STN-13, Wong merely shows that "VLAN\_ID1=MSB1+LSB1" and "VLAN\_ID1=12'b0000000000010." Additionally, in step 12, Wong merely shows that "VLAN\_ID2=MSB1+LSB2" and "VLAN\_ID2=12'b0000000111111."

However, simply disclosing that "the offset which is [a] 3-bit field...is used to point[] into one of the 8 entries," as in Wong, fails to even suggest "a contiguous range encoding that includes a starting indicator and an ending indicator" (emphasis added), as claimed by applicant. Further, simply disclosing steps where "VLAN\_ID1=MSB1+LSB1" and "VLAN\_ID2=MSB1+LSB2," as in Wong, fails to teach or suggest "a contiguous range encoding that includes a starting indicator and an ending indicator" (emphasis added), as claimed by applicant.

Furthermore, with respect to former claim 22, the Examiner has failed to indicate any specific portion of the Wong reference that teaches applicant's claimed "non-contiguous range encoding that includes a most significant bit (MSB) portion of an indicator and a bitmap decoded from a least significant bit (LSB) portion of the indicator...and a discrete encoding that includes a first indicator and a second indicator" (as amended - see this or similar, but not necessarily identical language in the independent claims). Accordingly, a notice of allowance or specific prior art showing of each of the foregoing claim elements is respectfully requested.

Applicant further notes that the prior art is also deficient with respect to the dependent claims. For example, with respect to Claims 10 and 19, the Examiner has relied on step 7 on page STN-8 from Wong to make a prior art showing of applicant's claimed technique "wherein...the encoding format is configured to be selected in response to control bits" (see this or similar, but not necessarily identical language in the aforementioned claims).

Applicant respectfully asserts that in step 6 on page STN-8 from Wong merely discloses a step with a command to "[g]et [a] 12-bit L3\_table\_Index with 3-bit count field." Furthermore, step 7 on page STN-8 from Wong merely discloses that "[t]he index points to the first entry of [a] column of 8-entries in the L3 table" and "[t]hen the offset which is [a] 3-bit field...is used to point[] into one of the 8 entries." However, merely disclosing a command to "[g]et [a] 12-bit L3\_table\_Index with 3-bit count field" and that "[the] 3-bit field...is used to point[] into one of the 8 entries," as in Wong, fails to even suggest that "the encoding format is configured to be selected in response to control bits" (emphasis added), as claimed by applicant.

Again, the foregoing anticipation criterion has simply not been met by the above reference, as noted above. Thus, a notice of allowance or specific prior art showing of each of the foregoing claim elements, in combination with the remaining claimed features, is respectfully requested.

To this end, all of the independent claims are deemed allowable. Moreover, the remaining dependent claims are further deemed allowable, in view of their dependence on such independent claims.

In the event a telephone conversation would expedite the prosecution of this application, the Examiner may reach the undersigned at (408) 505-5100. The Commissioner is authorized to charge any additional fees or credit any overpayment to Deposit Account No. 50-1351 (Order No. RM11P040).

Respectfully submitted,  
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